Variable-Stars

Star	R.A. h. m.	Decl. ° ′		h. m.	
U Cephei	0 52·2 ...	81 16 N. ...	Jan. 27,	23 21	*m*
λ Tauri	3 54·4 ...	12 10 N. ...	,, 26,	4 21	*m*
			,, 29,	3 14	*m*
δ Libræ	14 54·9 ...	8 4 S. ...	,, 29,	0 46	*m*
U Coronæ	15 13·6 ...	32 4 N. ...	,, 26,	20 49	*m*
U Ophiuchi ...	17 10·8 ...	1 20 N. ...	,, 24,	11 42	*m*
		and at intervals of		20 8	
δ Cephei	22 24·9 ...	57 50 N. ...	Jan. 28,	5 0	*m*
			,, 29,	19 0	*M*

M signifies maximum ; *m* minimum.

Meteor Showers

One of the minor periodical showers with radiant at R.A. 135°, Decl. 40° N., shows a maximum during the present week. Occasionally large meteors are observed from this radiant. Meteors from a radiant about R.A. 180°, Decl. 35° N., should also be looked for.

GEOGRAPHICAL NOTES

M. DE WOGAN, who has been searching in a small canoe for the true source of the Danube, communicates the result in a recent *Bulletin* of the Paris Geographical Society (Nos. 19 and 20). The story that it takes its rise in the gardens of the Prince of Fürstenburg at Donaueschingen, where a monument recording the fact is erected, is, he says, a fable. The Danube, he has found, is formed by the union of two small streams, the Brig, or Brigach, which takes its rise at Saint-Georges, to the north of the Mountain Tryberg, at about a mile from the source of the Neckar, and the Breg, or Bregach, which rises at St. Martin, to the west of Tryberg, and twenty miles from Donaueschingen, where both streams unite. M. Wogan, who has explored these streams and their tributaries, criticises and corrects the statements of MM. Réclus and Saint-Martin in their geographical works on this subject. M. Charles Rabot, in the same *Bulletin* describes a journey made during the last autumn in the peninsula of Kola, in Russian Lapland, a region which is largely a blank on our maps. In August M. Rabot traversed the peninsula twice, from north to south, from the Arctic Ocean to the White Sea. He describes it as excessively monotonous, covered by forests, with many large lakes, or rather marshes. On the eastern shore of Lake Imandra there is a range of mountains, called Umbdek, which reaches an altitude of a thousand metres, and which is the highest elevation in European Russia, except the Caucasus. These are a picture of savage desolation. He has come to the conclusion that the western part of Russian Lapland is far from being flat, as generally represented on the maps. Between the White Sea and the ocean there are three ranges of mountains separated by large depressions covered with forests, marshes, and lakes. M. Rabot concludes with some observations on the inhabitants—Russian Lapps and Samoyedes.

MR. CYRIL HAVILAND, of Sydney, in a letter in the *Times*, points out how little is really known in a scientific sense, of the islands of the Southern Pacific and of parts of the Australian coasts. Eleven of Her Majesty's vessels are at present in Sydney; they cruise frequently in these seas, but, says Mr. Haviland, no one is any the wiser. He thinks that these ships, and others of the Royal Navy suited for the purpose, should, as far as possible, be utilised by placing on board one or more specialists in the various fields of science, with the appliances necessary to enable them to prosecute their researches. He says that had only one professed naturalist been borne on the books of the *Nelson* or the *Diomed* during their stay on the Australian station, much light might have been thrown on many problems, for the seas and islands abound with undiscovered species. The suggestion is certainly a good one, for there must be many occasions when good scientific work could be done in the vessels of our Navy without in the smallest degree interfering with the object of the cruise or the discipline of the ship. How much may be done in that way by an officer of scientific attainments even in the midst of his professional work, is shown by the instance of Dr. Guppy, whose numerous communications in our own columns and elsewhere have made his name well known in the world of science.

AMONGST the articles in the current number of the *Proceedings* of the Royal Geographical Society is one by Mr. Ravenstein on bathy-hypsographical maps, with special reference to a combination of the Ordnance and Admiralty Maps. The leading features of maps such as Mr. Ravenstein suggests are that all heights and depths would be referred to one and the same datum-level; the features of the ground would be shown by means of horizontal contours, which would enable the compiler to limit himself to the introduction of a comparatively small number of carefully-selected figures; the intervals between the contours would be tinted to bring out the relief of the ground; the line along which land and water meet at ordinary spring tides would be marked; the foreshore and all sand-banks which uncover would be clearly indicated as on ordinary Admiralty Charts; roads, railways, and other features calculated to obscure the physical features of the ground would be omitted. A physical outline map of this character could be utilised for illustrating the hydrographical, geological, and other features of the country. Another important paper is Mr. Delmar Morgan's translation of the notes of M. Kossiakof, the military topographer who accompanied Dr. Regel on his journey in 1882 in Karateghin and Darwaz, on the borders of Chinese Turkestan and Afghanistan.

A LONG letter has just been received from Mr. H. O. Forbes, who, it will be remembered, left England in the beginning of last year, for the exploration of the interior of New Guinea. Mr. Forbes arrived at Port Moresby on August 28 last, and on September 2 started for Sogeré, in the interior, to prospect. He had a pleasant trip, saw the lie of the land, and the people—taking to them and they to him—and returned to Port Moresby to pick up his men and his baggage to start for the Owen Stanley Range in true earnest. On October 1 Sogeré was reached again. Within a week houses were erected for Mr. Forbes, his white companions, his men, and his stores; and soon after everything had been brought from Port Moresby and housed. Returning to the Astrolabe Range with Mr. Hennessy, Mr. Forbes completed his survey. On his return to Sogeré he found everything in shape, and began work at once with the help of his companions, collecting in the fine forest near the village, taking observations, and laying plans for the future. Mr. Forbes had made up his mind that it would be impossible to accomplish the ascent of the Owen Stanley Range this season, one of the results of the delay caused by the loss of his baggage. In the end of April, when the wet season is passing over, the attempt will be made. He had sent his Malay servant, Lopez, to camp out in search of a rare bird of paradise; and it speaks well, he says, for the quiet of the country that he can go off alone to a distant village where his language is unknown. On his way to the coast for supplies Mr. Forbes met Sir Peter Scratchley, who went on to Sogeré with Mr. Forbes, and expressed himself charmed with the house and the work already done, as well as with the good relations established with the natives. Mr. Forbes went back with Sir Peter Scratchley in order to accompany the latter to the north coast and Huon Gulf. Without additional funds it is very doubtful if he will be able to accomplish all he has planned.

THE current number of Dr. Umlauft's *Rundschau* contains an article on the geographical knowledge of the Alps in early times, the present instalment dealing with the Roman period. Other articles describe the Samoans and their customs; a cruise in the Straits of Magellan; while Herr Gavazzi discusses the orography of "the Croatian Mesopotamia," as he calls the district lying between the Drave and the Save. There are also some interesting statistics relating to the populations of German towns, schools in Finland, &c., but the most generally interesting of these are the statistics relative to the journeys of the various travellers who have crossed Africa from time to time. Dr. Livingstone crossed from St. Paul de Loanda to Quilimane, a distance of about 4000 kilometres, in twenty months; Commander Cameron from Bagamoyo to Catombela, 6000 kilometres, in thirty-two months; Mr. Stanley from Bagamoyo to Boma, 11,500 kilometres, in thirty-three months; Major Serpa Pinto from Benguela to Durban, 3700 kilometres, in sixteen months; Lieut. Weissmann from St. Paul de Loanda to Sadani, 4000 kilometres, in twenty-two months; Mr. Arnot from Durban to Benguela, 3500 kilometres, in thirty-nine months; Messrs. Capello and Ivens from Mossamedes to Quilimane, 4500 kilometres, in fourteen months. If these figures be accurate, it would appear that Mr. Stanley travelled more rapidly than any of the others, although he is closely pushed by MM. Capello and Ivens, for while his monthly average was about 349 kilometres, theirs was 321; but then his journey was about two and a half times longer than theirs in distance.

AN official memorandum communicated to the German Reichstag lately gives some details about the Marshall Archipelago, of which Germany has just assumed the protectorate. It includes thirty lagoon islands or atolls, none of which rise more than ten feet above the sea. The vegetation is limited to the coca palm, the bandanas, and the bread-fruit tree. The native fauna are a small lizard, land- and water-crabs, and a few wild pigeons. There are absolutely no springs or running water, the inhabitants being dependent on rain-water caught in hollows and clefts in the rock, which rapidly becomes brackish on account of the porous medium. The group naturally divides itself into two chains, the eastern or Ratack, and the western or Ralick. It is in this latter that the largest island of the whole group, Jaluit, is situated. It has an area of about thirty-five square miles, contains about 1000 inhabitants, and possesses a good harbour. On it are the factories of the European and American Companies trading to the group. American missionaries have also stations there, the work of which is carried on by Sandwich Islanders.

A RUSSIAN scientific expedition to proceed to China is being organised under the direction of Dr. Piassetsky. The expenses will be provided partly by the Imperial Exchequer, and partly by the Moscow Commercial Committee.

THE French Minister of Public Instruction has informed the Geographical Society of Paris that he has added to the Committee on historical and scientific work a section on historical and descriptive geography.

IN the last number of the *Mittheilungen* of the Vienna Geographical Society (Bd. xxviii. No. 12) Herr Becker describes the "Blue Grotto of Busi," one of the Dalmatian Islands, which has only recently been discovered, and which owes its name to a peculiar light effect. It greatly resembles the celebrated "Grotta azzura" at Capri, but seems to be inferior to the latter in several respects. Herr Wienkowski has a curious paper on the "Pomeranian Kassubs," a remnant of the Wendic peoples which once inhabited the districts between the Saale and Elbe on one side and the Vistula on the other. The sub-title of the paper is, "A Contribution to the Ethnography of Germany." The Kassubs, although, according to a popular song of their own, as numerous as the sand on the sea-shore, now are very few in number, and their special characteristics are disappearing with the spread of a common school education. The writer gives an historical sketch of the Kassubs, describes their occupations, dwellings, clothing, food, marriage and harvest customs, the speech, and concludes with a few words on their proverbs and tales. Prof. Palacky gives a brief account of attempts at acclimatisation of plants in the Congo region, and a letter from Dr. Lenz from the Congo is also published.

THE BENEFITS WHICH SOCIETY DERIVES FROM UNIVERSITIES[1]

TO be concerned in the establishment and development of a university is one of the noblest and most important tasks ever imposed on a community or on a set of men. It is an undertaking which calls for the exercise of the utmost care, for combination, co-operation, liberality, inquiry, patience, reticence, exertion, and never-ceasing watchfulness. It involves perplexities, delays, risks. Mistakes cannot possibly be avoided; heavy responsibility is never absent. But history and experience light up the problem; hope and faith give animation to the builders when they are weary and depressed. Deeply moved by these considerations, I desire to bring before you, my colleagues in this work, without whose labours all would be a failure, you who are Trustees, and you who are teachers, before the citizens of Baltimore, and before this company of students pressing forward to take the places of authority in the work of education and administration—before you all, my friends, I wish to bring some aspects of university life, which, if not new, may perhaps be stated in terms which are fresh, with illustrations drawn from our own experience.

I ask you to reflect at this time on the Relation of Universities to the Progress of Civilisation, and I begin by assuming that we are agreed substantially on the meaning of both these terms. The word university, as applied to a learned corporation, is several hundred years old, and in all times and lands has embodied the idea of the highest known agency for the promotion of knowledge and the education of youth. Civilisation is a new word, hardly introduced a century ago, though the idea which it embodies is as old as organic society. Guizot, to whose eloquence we owe the popularity of this term, avoids its formal definition, declaring in general terms that civilisation is the grand emporium of a people, in which all its wealth, all the elements of its life, all the powers of its existence, are stored up. "Wherever," as he goes on to say, "the exterior condition of man becomes enlarged, quickened, or improved, wherever the intellectual nature of man distinguishes itself by its energy, brilliancy, and its grandeur; wherever these two signs concur, and they often do so, notwithstanding the gravest imperfections in the social system, there man proclaims and applauds civilisation." Assuming, then, that by university the highest school is understood, and by civilisation the highest welfare of mankind, let us inquire into the influence which the advancement of knowledge by means of superior educational establishments has exerted or may exert upon the progress of society.

A little reflection will remind us of five great agencies by which modern Christian civilisation is helped forward: first, THE FAMILY, unit of our social organisation, recognised by Aristotle as the basis of society, and styled by modern philosophers "the focus of patriotism" (Lieber), and the very "starting-point of social morality" (Maurice); next, TRADE or COMMERCE, the exchange of one man's products for another's, the traffic between communities and nations; third, LAW and CUSTOM, written and unwritten, the enforcement of duties and defence of rights, the equitable adjustment of conflicting claims; fourth, RELIGION, the acknowledgment of personal responsibility to an infinite and all-controlling Power. The last to be named is KNOWLEDGE, the recorded observations and experience of our race in ancient and in modern times, or, in other words, SCIENTIA, science in its broadest significance.

These five influences working in dwelling houses, market places, state houses, churches, libraries, and schools, control our modern life; and that state of society is the best, in which domestic virtue, mercantile honour, and the freedom of exchange, obedience to law, pure and undefiled religion, and the general diffusion of knowledge, are the dominant characteristics. We are only concerned at present with the last of these five factors.

The means by which our race has acquired knowledge and preserved its experience are manifold. The inhabited world is a great laboratory, in which human society is busy experimenting. Observation, exploration, and reflection have been allied in interpreting the physical characteristics of the globe, ever since the primæval law, "Subdue the earth," was heard by primitive man; experiments in social organisation have also been made on a colossal scale, and in little microcosms; war has taught its pitiful lessons; superstition, irreligion, vice, and crime, as well as literature, art, law, religion, and philosophy, have all been teachers; customs, traditions, epics, creeds, codes, treaties, inscriptions, parchments, books, pyramids, temples, statues, museums, schools, pulpits, platforms, have all been employed to perpetuate and diffuse the knowledge which has been acquired; but ever since Europe emerged from the darkness of the Middle Ages, UNIVERSITIES have been among the most potent of all agencies for the advancement and promulgation of Learning. Their domain, the republic of letters, has been wider than the boundaries of any state; their citizens have not been restricted to any one vocabulary; their acquisitions have been hid in no crypt. They have gathered from all fields and distributed to all men. Themes the most recondite, facts the most hidden, relations the most complex, have been sought out and studied, that if possible the laws which govern the world might be discovered, and man made better.

In one of our halls there hangs a diagram which I never pass without pausing to think of its significance, listening as I would before the sphinx to discover if it has any message for me. It contains a list of European universities founded since the dawn of modern states—a period of more than seven centuries, a list of over two hundred names. Every state in Europe, every great city, has its high school. Popes, emperors, kings, and princes have been their founders; ecclesiastics, reformers, republics, municipalities, private citizens, munificent women, have contributed to their maintenance. Wherever European civilisation has gone, the idea of the university has been carried with it, to North and South America, to Australia, even to India, China, and Japan; it came with the Virginians to Williamsburg, with the New Englanders to Cambridge and New Haven; it was planted in California before there was an organised state on the Pacific slope.

[1] An Address by D. C. Gilman, President of the Johns Hopkins University.